STATE OF MICHIGAN
DEPARTMENT OF COMMUNITY HEALTH
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

JANET OLSZEWSKI
DIRECTOR

MEMORANDUM

DATE: April 6, 2005

TO: Long Term Care Facilities

FROM: MDCH/Clinical Advisory Panel
Quality Improvement Nurse Consultants

RE: Clinical Process Guideline: Urinary Incontinence

Best clinical practice is only worthwhile to the extent that we use it to guide care for our residents.

Collaboratively, we are striving to improve urinary continence of nursing home residents in Michigan. The purpose of the Guide is to clarify how to apply the **Urinary Incontinence Process Indicator Checklist**. Electronic copies are available for reprint at www.michigan.gov/qinc.

This optional "best practice" tool was presented to you at the Spring 2005 Joint Provider/ Surveyor Training on April 6, 2005. Effective date for usage of the tool is May 9, 2005. Both facilities and surveyors will have the opportunity to use the Checklist when urinary incontinence is of concern. Facilities will be accorded the opportunity to demonstrate that they have followed the steps in this guideline, as evidence to support an appropriate care process related to urinary incontinence.

A workgroup including doctors, nurses, educational specialists, and restorative care directors with experience in geriatrics and nursing home care discussed the topic in depth. They used generally accepted, current references in preparing these documents. The Process Indicator Checklist contains a series of steps related to urinary incontinence.

Best clinical practice information helps each facility provide the best possible care throughout the year. Along with information in the Federal OBRA regulations, our surveyors will use these Process Guidelines to review how your facility is managing urinary incontinence. We encourage you to examine your process regarding urinary incontinence to consider the application of the following information.

The Basic Care Process

The management of all conditions and problems in a nursing home should follow these basic steps:

Assessment/recognition: The purpose of this step is to provide a rational basis for deciding whether there is a need, risk, or problem and what to do about it. The facility's staff and practitioners collect relevant information about the resident (history, signs and symptoms, known medical conditions, personal habits and patterns, etc.) and then a) evaluate and organize that information to identify whether the individual has a specific need, condition, or problem; and b) describe and define the nature (onset, duration, frequency, etc.) of the risk, condition, or problem.

Diagnosis/cause identification: The facility's staff and practitioners attempt to identify causes of a condition or problem, or explain why causes cannot or should not be identified.

Treatment/management: The facility's staff and practitioners use the above information to decide how to manage a resident's condition, symptom, or situation. Where causes may be identifiable and correctable, they seek and address them or explain why they could not or should not have done so.

Monitoring: The facility's staff and practitioners evaluate the individual's progress over time in relation to a risk, need, problem, condition, or symptom, consider the effectiveness of interventions, and make a systematic determination about what to do next.

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URINARY INCONTINENCE

CARE PROCESS STEP	EXPECTATIONS	RATIONALE
ASSESSMENT/PROBLEM RECOGNITION		
1. Did the staff and physician seek and document risk factors for urinary incontinence and any history of urinary incontinence?	- On admission and periodically thereafter (at least quarterly and when there is a significant change in urinary function), the staff and practitioner should seek and document factors that have been associated with, or present a risk for, urinary incontinence in each resident.	- Risk factors may include medical conditions (delirium, dementia, urinary retention, uterine prolapse, enlarged prostate, chronic constipation, stroke - see Table 1a), environmental factors (impaired mobility, inadequate access to toilet - see Table 1b), food and beverages that stimulate or irritate the urinary tract or increase urine production - see Table 1c, and medications (diuretics, opioid analgesics, antihistamines, other anticholinergics - see Table 1d).
2. Did staff identify residents with signs and symptoms of urinary incontinence?	- The staff should describe the continence problem in detail (for example, voiding patterns, frequency, times of day, urgency, etc.). - The staff and practitioner should differentiate chronic from acute or recent onset, and stable from unstable incontinence.	- Acute or recent onset incontinence may indicate transient or reversible causes. - Patterns of incontinence vary, and a change in a pattern of continence or incontinence may indicate a new or recurrent underlying cause. - Incontinence may be “stable” (that is, patterns are fairly consistent over time) or “unstable” (that is, patterns vary significantly from day to day). Unstable incontinence may imply a new or worsening underlying cause, and may require some additional investigation.
3. Did the staff and practitioner follow up on residents who have urinary incontinence on admission or whose incontinence persists for more than one month, despite pertinent interventions?	- If a nursing home resident has urinary incontinence on admission or the new onset of urinary incontinence that persists for longer than one month despite pertinent interventions, the staff and physician should try to obtain a targeted history (or expand existing information) that documents pertinent information {Schnelle et al 2003}, including a) previous interventions for urinary incontinence, and results, b) physical	- Many medications can affect continence, by affecting urine production, bladder function, level of consciousness, cognition, etc; especially those with antihistaminic and anticholinergic properties (see Table 1d). - Environmental factors and assistive devices (for example, grab bars, raised toilet seats, bedside commodes, urinals, bed rails, restraints, walkers) may either impede or facilitate an

	conditions that may affect continence, such as prolapsed uterus or bladder (based on inspection or targeted examination of the pelvic region), or prostate enlargement (see Table 1a), c) risk factors related to the use of an indwelling urinary catheter, d) functional impairments that may affect the ability to maintain continence, e) medications that may affect continence, and f) environmental factors and assistive devices that may either impede or facilitate a resident's ability to access the toilet.	individual's ability to access the toilet. - Complications related to an indwelling catheter may include urinary tract infection, trauma, encrustation, and bladder calculi.
DIAGNOSIS/CAUSE IDENTIFICATION		
4. Did the practitioner and staff seek causes of urinary incontinence or indicate why causes could not or should not be sought or identified?	- The practitioner and staff should identify additional diagnostic workup to help define the category, severity, or causes of incontinence, or document why one was not indicated. - The staff and practitioner should categorize the incontinence, or indicate why it is not possible to do so. - Measurement of post-void residual (PVR) is recommended and should be considered (or documented as to why it couldn't or shouldn't be done) for all residents who are assessed to be candidates and would benefit from PVR testing.	- Urinary incontinence may be categorized as urge (often referred to as "overactive bladder"), stress, mixed (combined urge and stress), overflow, functional, or transient (see Table 2). - Depending on the situation, tests might include a urinalysis, urine culture (if a symptomatic UTI is suspected), or pertinent testing (urine cytology) if a bladder tumor is suspected on clinical grounds (see Table 3). Refer also to: CDC 12 Steps to Prevent Antimicrobial Resistance in Healthcare Settings, 2004 and APIC Text of Infection Control and Epidemiology, 2002. - A post void residual (PVR) can be helpful if urinary retention is suspected. When available, bladder ultrasound (by trained staff) instead of urinary catheterization may be helpful. A normal PVR is 50 ml urine remaining post void and without straining. A PVR > 200 ml is abnormal; values between 50 – 200 ml should be interpreted in light of other findings. (AMDA 2005)

TREATMENT/PROBLEM MANAGEMENT		
5. Did the staff and practitioner identify and initiate appropriate general interventions?	- The staff should institute pertinent general interventions, a fluid intake plan consistent with identified needs, and measures to try to minimize clinically significant constipation.	- General interventions may include an easily accessible toilet, commode, or urinal; reminders to toilet, assistance with toileting if necessary, assistive devices to facilitate proper toileting including elevated toilet seats or a walker for safety (see Table 1b). - Significant constipation or impaction can affect urinary function.
6. Did the staff and practitioner address transient causes of incontinence?	- The staff and practitioner should address a symptomatic UTI (and distinguish it from asymptomatic bacteriuria, which should not ordinarily be treated with antibiotics, especially in a catheterized individual). - If treating a UTI, the staff and physician should identify appropriate treatment goals (especially in catheterized resident), and should show that they followed pertinent standards of practice for identifying and treating UTIs. (AMDA Common Infections in the long-term care setting CPG 2004.)	- Transient causes are those that arise fairly abruptly and may be improved or corrected by specific interventions; for example, medication side effects (see Table 1d), or symptomatic UTI (see Table 4). - Asymptomatic bacteriuria generally does not require treatment, unless it is suspected to be associated with unstable chronic incontinence or with the onset of possibly transient incontinence. - Although urosepsis may cause acute symptoms such as delirium or anorexia, bacteriuria alone has not been shown to be associated with these or other acute symptoms. “Clinical manifestations of UTI in the elderly are often nonspecific. Along with classic signs and symptoms of UTI (fever, dysuria, frequency, suprapubic or flank pain), the clinician should carefully evaluate someone with increased confusion, failure to eat, and failure to get up and move around in a previously mobile patient.” (APIC 2002)

7. Did the staff initiate a toileting or "check and change" program for an incontinent resident, especially if incontinence remains after addressing transient causes?	- If a nursing home resident remains incontinent after treating transient causes, then the staff should initiate a toileting program, starting with a 3- to 5-day toileting assistance trial (see Table 5). - For residents who: a) cannot state their own name, or, if aphasic, cannot point reliably to one of two objects; b) cannot transfer to the bathroom safely with assistance; c) during prompted voiding are found wet > 20% of the time over a 3- to 5-day period, staff should initiate a "check and change" strategy. (ACOVE, Annals of Long Term Care, 2000) - The staff should consider modifying approaches based on variable patterns or fluctuations in continence or overall resident function. After the resident with an indwelling catheter has been treated for infection and all the other treatable conditions, a voiding trial can be attempted unless the resident is in a coma, has terminal illness, a Stage 3 or 4 pressure ulcer in an area affected by incontinence, untreatable urethral blockage. (RAI Version 2.0 Manual p. C-37)	Prompted voiding is a technique useful for dependent or more cognitively impaired residents who can state their name, or reliably point to one of two objects. (CMS 2005) -Prompted voiding attempts to teach the resident who is incontinent to recognize bladder fullness or the need to void, to ask for help, or to respond when prompted to toilet. -Residents who are not able to participate in prompted voiding may be candidates for habit training programs (scheduled toileting at regular intervals to match the resident's voiding habits, without trying to delay voiding). -A check and change involves checking the resident's dry/wet status at regular intervals and using incontinence devices and products.
8. Did the staff and practitioner identify residents who might be candidates for bladder retraining or pelvic floor muscle rehabilitation?	- If a cognitively intact, willing nursing home resident remains incontinent after basic measures are instituted, the staff and practitioner should identify those who might benefit from bladder retraining or pelvic floor muscle rehabilitation.	-Bladder retraining requires the resident to resist or inhibit the sense of urinary urgency, to postpone or delay voiding and to urinate according to a timetable. Training consists of education, scheduled voiding with systematic delay of voiding, and positive reinforcement. This resident should be fairly active in ADL*s*, have occasional incontinence, be aware of the need to urinate and be motivated. Bladder retraining usually takes at least several weeks. (CMS, 2005)

		-These interventions may benefit willing, cognitively intact residents with stress, urge, or mixed incontinence.
9. Did the staff and practitioner justify and manage use of medications, where indicated, to treat incontinence?	- If the physician prescribes medications to treat incontinence, the medications should be targeted to the type of incontinence and the resident's risks and existing medication regimen.	- Incontinence medications vary in their effectiveness and may have significant anticholinergic side effects.
10. Did the staff and practitioner justify and manage use of incontinence products and catheters?	- If a resident remains incontinent despite the preceding efforts, the staff and practitioner may consider incontinence products or catheters. - If a resident is admitted with an indwelling catheter, or has one inserted after admission, the staff and practitioner should justify continuing the catheter, or remove it. - Prior to inserting an indwelling catheter for urinary retention or overflow incontinence, the staff and physician should try intermittent catheterization or document why it was not feasible or did not work. See Table 6 for indications and care of chronic indwelling catheters**.**	- Disposable absorbent products and, rarely, external urine collection devices (e.g., external catheters) may be helpful, but they should not be used as the primary long term approach to continence management until the resident has been appropriately evaluated and other approaches that are feasible and appropriate have been considered. (CMS, 2005) -Sterile insertion and removal of a catheter through the urethra every 3-6 hours for bladder drainage may be appropriate for the management of acute or chronic retention in appropriate individuals. Residents with new onset of atonic or hypotonic bladder (usually seen after indwelling catheterization in the hospital) may benefit from intermittent catheterization (up to 7 days) until bladder tone returns. A voiding trial and post-void residual can help identify when bladder tone returns. (CMS, 2005) -Indwelling catheters increase the risk of bacteriuria and urosepsis, and may be uncomfortable and socially distressing. - Other less common approaches to continence management may include a pessary and surgical approaches.

MONITORING		
11. Did the staff appropriately implement approaches to incontinence management?	- The staff should consistently and correctly implement the individualized plan of care related to managing incontinence.	- Interventions should be initiated and modified based on individualized resident assessment. If an individual's incontinence patterns vary significantly, then different interventions and approaches may be appropriate at different times.
12. Did the staff and physician evaluate and document the progress of a resident's continence and justify continuing existing approaches?	- Monitoring should include: responsiveness to treatment, possibility for changing to a less obtrusive or lower-risk intervention, and resident satisfaction with treatment. - For a resident with an indwelling catheter, the staff and physician should periodically document medical justification for its continued use (or removal if clinically indicated), re-evaluate and define interventions in place to minimize complications from catheter use, and assess consistency with resident's condition, and goals. (CMS, 2005)	- Some residents may remain incontinent despite various attempted interventions. - The fact that someone remains incontinent is not alone a sufficient justification for an indwelling catheter.
13. Did the staff and practitioner monitor, and address, complications of incontinence and of higher risk interventions such as indwelling catheters and medications?	- The staff and practitioner should monitor for, and manage, complications of incontinence and of higher risk interventions such as indwelling catheters and medications.	- Complications of catheters may include, but are not limited to, pain, urethral erosion, or symptomatic UTIs with or without sepsis. - Side effects of incontinence medication treatment can include, but are not limited to, dry mouth, constipation, confusion, and agitation.

Documentation Checklist: Process Guideline for Urinary Incontinence
May 9, 2005

Resident: _____ Date: _____

If a concern related to urinary incontinence is triggered during the survey process, the facility will be given the opportunity to demonstrate that it has followed the steps in this checklist, as evidence to support an appropriate care process related to urinary incontinence. Evidence of appropriate care process will be considered in determining whether an adverse event (a negative outcome), or the potential for an adverse event, related to the management of urinary incontinence can be attributed to a deficient facility practice. If attributable to a preventable (avoidable) deficient facility practice, this checklist may also be used in analyzing the severity of the deficiency, if a citation should result.

F-tags, which could be associated with urinary incontinence concerns, are provided for each of the Tables. Other tags may also be appropriate.

DOCUMENTATION CHECKLIST:

PROCESS GUIDELINE FOR URINARY INCONTINENCE

May 9, 2005

PROCESS INDICATORS	Yes	No	N/A
ASSESSMENT/PROBLEM RECOGNITION May relate to F- 272, 278, 310, 315, 316			
1. Did the staff and physician seek and document risk factors for urinary incontinence and any history of urinary incontinence?			
2. Did staff identify residents with signs and symptoms of urinary incontinence?			
3. Did the staff and practitioner follow-up on residents who have urinary incontinence on admission or whose incontinence persists for more than one month, despite pertinent interventions?			
DIAGNOSIS/CAUSE IDENTIFICATION May relate to F-226, 315, 316, 327, 329, 353, 498			
4. Did the practitioner and staff seek causes of urinary incontinence or indicate why causes could not or should not be sought or identified?			
TREATMENT/PROBLEM MANAGEMENT May relate to F- 241, 279, 309, 310, 312, 315, 316, 327			
5. Did the staff and practitioner identify and initiate appropriate general interventions?			
6. Did the staff and practitioner address transient causes of incontinence?			
7. Did the staff initiate a toileting or "check and change" program for an incontinent resident, especially if incontinence remains after addressing transient causes?			
8. Did the staff and practitioner identify residents who might be candidates for bladder retraining or pelvic floor muscle rehabilitation?			
9. Did the staff and practitioner justify and manage use of medications, where indicated, to treat incontinence?			
10. Did the staff and practitioner justify and manage use of incontinence products and catheters?			
MONITORING May relate to F- 279, 280, 385, 429, 441, 444			
11. Did the staff appropriately implement approaches to incontinence management?			
12. Did the staff and physician evaluate and document the progress of a resident's continence and justify continuing existing approaches?			
13. Did the staff and practitioner monitor, and address, complications of incontinence and of higher risk interventions such as indwelling catheters and medications?			

_____ _____

Signature of person completing the form Date

Table 1a -- Internal Risk Factors for Urinary Incontinence

Atrophic Vaginitis
Bladder/Prostate Cancer
Congestive Heart Failure
Dementia
Diabetes
Neurological Disorders
Parkinson's
Prolapsed Uterus
Stroke

Possibly Reversible

Anxiety
Constipation
Delirium
Depression
Excessive/Inadequate Urine Output
Fecal Impaction
Hypercalcemia
Hyperglycemia
Impaired mobility
Pain
Symptomatic UTI
Urethral obstruction
Urinary retention

Table 1b -- Environmental Risk Factors for Incontinence

Call light not within reach
Inappropriate access/distance to toilet
Lack of alternate methods to toilet
(commode, bedpan, urinal, adult briefs)
Lack of aids to/assistance with mobility
(elevated toilet seats, grab bars, walker, wheelchair, staff assist)
Lack of appropriate resident clothing
(elastic waistband, velcro closures, adequate footwear)
Poor lighting
Use of physical restraints
Inadequate staffing
Reminders to toilet

Table 1c -- Oral Bladder Irritants

Alcohol
Caffeine

Table 1d -- Medications that Can Increase Risk of Incontinence

Alpha Adrenergic blockers/agonists
Anticholinergics
Anticholinergic or alpha-adrenergic antihistamines
Anticholinergic anti-parkinsonian medications
Antispasmodics
Beta Adrenergic agonists
Calcium channel blockers
Diuretics
Anticholinergic psychoactive medications
Narcotics

Table 2 -- Types of Urinary Incontinence
(Reference: AMDA, 2004)

Urge
- Most common cause of urinary incontinence in older patients.
- Characterized by abrupt urge to urinate, frequent need to urinate, large-volume urine loss, and nocturia.
- Associated with detrusor muscle overactivity, which may be age-related or may result from bladder infection or urethral irritation.

Stress
- Second most common type of urinary incontinence in older patients.
- Occurs with increases in intra-abdominal pressure (e.g., coughing, sneezing, laughing, walking stairs, bending, lifting).
- Results from impaired closure caused by insufficient pelvic support [or impaired function of the sphincter].

Overflow
- Usually results from detrusor muscle underactivity, bladder outlet obstruction, or both.
- May result from impaired or absent bladder contractility (neurogenic bladder) caused by diabetic or other neuropathy, low spinal cord injury, or pelvic nerve damage due to surgery or radiation therapy.
- Symptoms of overflow incontinence are similar to those due to stress or urge incontinence, and may include dribbling, weak urinary stream, hesitancy, frequency, and nocturia.

Functional
- Results primarily from physical or cognitive problems that prevent reaching toilet facilities in time, in someone whose urinary tract function would otherwise be adequate for them to be continent.
- Causes may include dementia, confusion, poor eyesight, inflammatory joint disease, lack of strength, poor mobility, poor dexterity, or reluctance to toilet due to depression.
- Underlying environmental factors may include poor lighting, physical restraints, low chairs that are difficult to rise from, and excessive distance from toilet facilities.

Transient
- Temporary episodes of urinary incontinence that are reversible once the cause is identified and treated.
- Causes may include delirium, infection, atrophic urethritis or vaginitis, medications (e.g., sedatives, hypnotics, diuretics, anticholinergic agents), markedly increased urine production, or limited mobility.

Mixed
- Mixed incontinence refers to a combination of stress and urge incontinence.

Table 3 -- Diagnostic Tests Relative to Urinary Incontinence

Table	**Purpose**
Urinalysis	Screening for hematuria Screening for bacteriuria and pyuria (in patients with symptoms of urinary tract infection)
Urine cultures and sensitivities	Verifying bacteriuria and guide antibiotic selection in individuals with symptoms suggesting an UTI
Urine cytology	Detect evidence of cancer in sterile hematuria
Post-void residual	Determine if urinary retention is present
Glucose, Calcium	Hyperglycemia/hypercalcemia may cause Polyuria

Table 4 -- Criteria for Treatment of a Urinary Tract Infection

Residents with a **catheter** need at least **two**, resident **without a catheter** need at least **three** of the following symptoms:

- Fever: Increase of temperature (2°F, 1.1°C) from baseline **or**
  Rectal temperature >99.5°F (37.5°C) rectally twice **or**
  Single measurement of temp >100°F (37.8°C)
  (Bentley et al 2001)
- New or increased chills, frequency, urgency, or burning on urination
- New onset of pain or tenderness (flank/suprapubic)
- Changes in character of urine (new bloody urine, foul smell, cloudiness) or by lab report (pyuria, microscopic hematuria)
- Worsening of mental or functional status (confusion, lethargy, decreased activity, decreased appetite, unexplained falls, recent onset of incontinence)
- Catheterized residents only: obstruction, leakage, mucosal trauma

PLEASE NOTE: This prompted voiding protocol reflects an example of this form of resident assessment. It is not regulatory in nature and similar protocols may be substituted. Resident dignity and quality of life are considered inherent in all protocols.

Table 5 -- Example of a Prompted Voiding Protocol for a Nursing Home
(Reference: ACOVE)

Assessment Period - (3-5) Days

1. Contact residents every hour from 7:00 a.m. to 7:00 p.m. for 2-3 days, then every 2 hours for 2-3 days.
2. Focus their attention on voiding by asking them whether they are wet or dry.
3. Check them for wetness, record on bladder record, and give feedback on whether response was correct or incorrect.
4. Whether wet or dry, ask residents if they would like to use the toilet or urinal. If they say yes:
    - Offer assistance.
    - Record results on bladder record.
    - Give positive reinforcement by spending extra time talking with them.

    If they say no:
    - Repeat the question once or twice.
    - Inform them that you will be back in one hour and request that they try to delay voiding until then.
    - If there has been no attempt to void in the last 2-3 hours, repeat the request to use the toilet once or twice more before leaving.
5. Measure voiding volumes as often as possible by:
    - Placing measuring hat in the commode.
    - Preweighing and then reweighing incontinence pads and garments [if appropriate scale is available].

Table 6 -- Chronic Indwelling Catheters in the Nursing Home
(Adapted from AMDA, APIC)

Appropriate Indications:

- Urinary retention characterized by the following:
  - -- Persistent overflow incontinence, symptomatics infections, or renal dysfunction.
  - -- Documented post void residual (PVR) volume >200 milliliters.
  - -- Cannot be treated surgically or medically.
  - -- Cannot be managed practically with intermittent catherization.
- Presence of skin wounds, pressure sores, or skin irritations that are being contaminated by urinary incontinence despite appropriate personal care.
- Care of terminally ill or severely impaired residents for whom bed and clothing changes are uncomfortable or disruptive.

Ongoing Care:

- Maintain sterile, closed gravity drainage system and avoid breaking the closed system. If the system must be opened *wash hands, apply gloves and* disinfect (e.g., with an alcohol wipe) the catheter-tubing junction before disconnection. *Prevent kinks or loops in the tubing that impede urine flow.* Do not allow the catheter tubing, bag or spigot to touch the floor. Wash hands between residents in institutional settings.
- Use the smallest catheter (consistent with good drainage) and the smallest balloon possible to minimize urethral and bladder trauma. Use a system with a sampling port.
- Secure the catheter to the upper thigh *in women* or lower abdomen in men to avoid perineal contamination and urethral irritation due to movement of the catheter. Vary the exact site at regular intervals. Keep the collection bag below the level of the bladder.
- Avoid frequent and vigorous cleaning of the catheter entry site. Wash with mild soapy water, rinse and dry. Once per day is generally sufficient; more frequent and vigorous manipulation is likely to be detrimental. *Strive to avoid fecal contamination of urinary catheter. Promptly clean feces from catheter entry site.*
- Do not routinely irrigate. Do not irrigate without a doctor's order. If irrigation is absolutely necessary, use a large-volume sterile syringe and sterile irrigant. Use aseptic technique and disinfect the catheter tubing junction before disconnecting. Dispose of irrigating equipment (e.g., after 8 hours). Use sterile irrigant in smallest containers possible (e.g., 100 to 250 mL).
- Do not routinely change the catheter at a fixed time interval (although this is often done every 30 to 60 days, there is insufficient evidence to support changing urinary catheters routinely).
- Do not routinely use prophylactic or suppressive urinary antiseptics or antimicrobials.
- When disconnecting, reconnecting and storing leg bags, disinfect connections with alcohol before disconnecting or connecting. Change bags at regular intervals; rinse with soap and water, vinegar, or a 1:10 bleach and water solution after each use. Dry bags and store empty; cover all connections. Label bag with resident's name and date.
- Do not do routine surveillance cultures to guide management of individual residents. All residents with long-term catheters have bacteriuria, (often polymicrobial) and the organisms change frequently.
- Provide regular inservice training for all personnel who provide care to residents with catheters.
- Do not treat bacteriuria unless symptoms develop. Consider other possible sources of infection before attributing symptoms to urinary tract infection.
- If a symptomatic infection develops, change the catheter before collecting a specimen for culture (specimens obtained from the old catheter may be misleading because of colonization of the catheter lumen).
- If symptomatic urinary tract infections develop frequently, consider a genitourinary evaluation to rule out pathologic conditions (e.g., stones, periurethral or prostatic abscesses, chronic pyelonephtritis).

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